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CFETP 1A1X1B  
Parts I-II  
August 1998

# **AFSC 1A1X1B**

## **Flight Engineer Specialty (Helicopter)**



**CAREER FIELD**  
**EDUCATION AND TRAINING PLAN**

**CAREER FIELD EDUCATION AND TRAINING PLAN  
FLIGHT ENGINEER SPECIALTY  
(HELICOPTER)  
AFSC 1A1X1B**

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**FLIGHT ENGINEER SPECIALTY  
AFSC 1A1X1B  
CAREER FIELD EDUCATION AND TRAINING PLAN**

**Part I**

***Preface***

1. This Career Field Education and Training Plan (CFETP) is a comprehensive education and training document that identifies life-cycle education and training requirements, training support resources, and minimum core task requirements for this specialty. The CFETP will provide personnel a clear career path to success and instills rigor in all aspects of career field training.
2. The CFETP consists of two parts; both parts of the plan are used by supervisors to plan, manage, and control training within the career field.
  - 2.1 Part I provides information necessary for overall management of the specialty. Section A explains how everyone will use the plan; Section B identifies career progression information, duties and responsibilities, training strategies, and career field path; Section C associates each level with specialty qualifications (knowledge, education, training, and other); Section D indicates resource constraints. Some examples are funds, manpower, equipment, facilities. Section E identifies transitional training guide requirements for SSgt through MSgt. Note: AFMAN 36-2108, *Airman Classification*, contains the specialty descriptions.
  - 2.2. Part II includes the following: Section A identifies the Specialty Training Standard (STS) and includes duties, tasks, technical references to support training, Air Education and Training Command (AETC) conducted training, wartime course, core tasks, and correspondence course requirements; Section B contains the course objective list and training standards supervisors will use to determine if airmen satisfied training requirements; Section C identifies available support materials. An example is a qualification training package (QTP) which may be developed to support proficiency training. QTPs identified in this section have been developed to support upgrade/qualification training. These packages are identified in AFIND 8, *Numerical Index of Specialized Educational Training Publications*; Section D identifies a training course index which are used to determine resources available to support training. Included here are both mandatory and optional courses; Section E identifies MAJCOM unique training requirements.
3. This CFETP is designed to ensure individuals in AFSC 1A1X1B receive comprehensive and effective training at the appropriate phases of their career. This plan will enable us to train today's work force for tomorrow's jobs. At unit level, supervisors and trainers use Part II to identify, plan, and conduct training commensurate with the overall goals of this plan.

## ***ABBREVIATIONS/TERMS EXPLAINED***

**Advanced Training (AT).** Formal course which provides individuals who are qualified in one or more positions of their Air Force Specialty (AFS) with additional skills/knowledge to enhance their expertise in the career field. Training is for selected career airmen at the advanced level of the AFS.

**Aircrew Training System (ATS).** A comprehensive listing of tasks and objectives to be trained during formal training.

**Air Force Career Field Manager (AFCFM).** Individual appointed by Air Staff DCS's to manage education, training, and resources for a specific career field(s).

**Basic Aircraft Qualification (BAQ).** An aircrew member who has satisfactorily completed initial qualification training and is qualified to perform aircrew duties in the unit aircraft. The member must perform at the minimum frequency necessary to meet the most recent sortie and flight standards set for that weapon system in the applicable MDS-Specific, Volume 1.

**Basic Mission Capable (BMC).** An aircrew member who has satisfactorily completed mission qualification training, does not maintain MR/CMR status, but maintains familiarization in the command or unit operational mission. The aircrew member may maintain qualification in some aspects of the unit mission, and is able to attain full qualification in the unit mission within 30 days, or otherwise specified in the applicable MDS-Specific, Volume 1.

**Career Development Course (CDC).** A self-paced correspondence course designed to upgrade a skill level.

**Core Task.** A task AFCFMs identify as essential qualification requirements for upgrade within an AFS. These tasks exemplify the essence of the career field--the foundation. Failure to complete core tasks precludes upgrade. Core tasks not applicable to MAJCOMs are waivable by MAJCOM functional managers.

**Course Objective Lists (COL).** A publication, derived from our initial skills course training standard, identifying the tasks and knowledge requirements, and respective standards provided to achieve a 3-skill level in this career field. Supervisors use the COL to conduct graduate evaluations in accordance with AFI 36-2201, *Developing, Managing, and Conducting Military Training Programs*.

**Cockpit/Crew Resource Management (CRM).** The effective use of all available resources—people, weapon systems, facilities and equipment, and environment—by individuals or crews to safely and efficiently accomplish an assigned mission or task. The term "CRM" will be used to refer to the training program, objectives, and key skills directed to this end. MAJCOMs may implement their programs as either "cockpit" or "crew" resource management based on their respective missions.

**Enlisted Specialty Training (EST).** A mix of formal training (technical school) and informal training (on-the-job) to qualify and upgrade airmen in each skill level of a specialty.

**Exportable Training.** Additional training via computer assisted, paper text, interactive video, or other necessary means to supplement training.

**Initial Skills Training.** A formal school course that results in an award of a 3-skill level AFSC.

**Instructional System Development (ISD).** A deliberate and orderly, but flexible process for planning, developing, validating, implementing, and reviewing instructional programs. It ensures personnel are taught, in a cost efficient way, the knowledge and skills for successful job performance.

**MAJCOM/FOA EEFI.** Major Command/Field Operating Agency Essential Elements of Friendly Information. Unclassified information that when combined with other information can reveal an insight into classified operations.

**Mission Design Series (MDS).** A term used to identify an aircraft, e.g., H-60, H-53, H-1

**Mission Ready/Combat Mission Ready (MR/CMR).** An aircrew member who has satisfactorily completed mission qualification training and maintains qualification and proficiency in the command or unit operational mission.

**On-the-Job Training (OJT).** Hands-on, over-the-shoulder training conducted to certify personnel in both upgrade (skill level award) and job qualification (duty position certification) training.

**Phase I Initial Qualification Training (IQT).** An aircrew member engaged in training needed to qualify for basic aircrew duties in an assigned position for a specific aircraft, without regard for the unit's operational mission.

**Phase II Mission Qualification Training (MQT).** An aircrew member engaged in training needed to qualify in an assigned aircrew position to perform the command or unit operational mission.

**Phase III Continuation Training (CT).** An aircrew member engaged in training to maintain and develop a qualification required in Phase I or Phase II training. An aircrew member in Phase III training may be assigned Mission Ready (MR), Mission Capable (MC), or Basic Qualification (BQ) status.

**Qualification Training Package (QTP).** An instructional course designed for use at the unit to qualify, or aid qualification, in a duty position or program, or on a piece of equipment. It may be printed, computer based, or in other audiovisual media.

**Resource Constraints.** Resource deficiencies, such as money, facilities, time, manpower, and equipment that preclude desired training from being delivered.

**Specialty Training Standard (STS).** An Air Force publication that describes skills and knowledge that airman in a particular Air Force specialty need on the job, and identifies the training provided to achieve a 3-, 5-, and 7-skill level within an enlisted AFS. It further serves as a contract between AETC and the functional user to show which of the overall training requirements for an AFSC are taught in formal schools and correspondence courses.

**Standard.** An exact value, a physical entity, or abstract concept, established and defined by authority, custom, or common consent to serve as a reference, model, or rule in measuring quantities or qualities, establishing practices or procedures, or evaluating results. A fixed quantity or quality.

**Total Force.** The collective components (active, reserve, guard, and civilian elements) of the United States Air Force.

**Weapon System Training Package (WSTP).** An instructional course which includes Initial Qualification (IQT), Mission Qualification Training (MQT), Continuation Training (CT) designed for use at the unit to qualify or aid qualification in a duty position, program, or on equipment. It may be printed, computer based, flying, simulator, or other audio visual material.

**Upgrade Training (UGT).** Training that leads to the award of a higher skill level in an AFS.

## ***Section A - General Information***

**1. Purpose.** This CFETP provides information necessary for the Air Force Career Field Manager (AFCFM), MAJCOM functional managers (MFMs), commanders, training managers, supervisors, and trainers to plan, develop, manage, and conduct an effective and efficient career field training program. The plan outlines the training that individuals must receive in order to develop and progress throughout their career. For the purpose of this plan, training is divided into four areas: initial skills, upgrade training (UGT), qualification training (QT), and continuation training (CT). Initial skills training is the Air Force Specialty specific training an individual receives upon entry into the Air Force or upon retraining into this specialty for award of the 3-skill level. For this career field, training is provided by AETC at Kirtland AFB, NM. Upgrade training identifies the mandatory courses, task qualification requirements, and correspondence course completion required for award of the 3-, 5-, 7-, and 9-skill levels. Qualification training is actual hands-on task performance training designed to qualify an airman in a specific duty position. This training program occurs both during and after the upgrade training process. It is designed to provide the performance skills/knowledge training required for the job. Continuation training is additional training either in-residence or exportable advanced training courses, or on-the-job training, provided to personnel to increase their skills and knowledge beyond the minimum required. The CFETP has several purposes, some are:

- 1.1 Serves as a management tool to plan, manage, conduct, and evaluate a career field training program. Also, it is used to help supervisors identify training at the appropriate point in an individual's career.
- 1.2. Identifies task and knowledge training requirements for each skill level in this specialty and recommends education/training throughout each phase of an individual's career.
- 1.3. Lists training courses available in the specialty, identifies sources of training, and the training medium.
- 1.4. Identifies major resource constraints which impact full implementation of the desired career field training program.

**2. Uses.** The plan will be used by MFMs and supervisors at all levels to ensure a comprehensive and cohesive training programs are available and/or instituted for each individual in the specialty.

2.1. AETC training personnel will develop/revise formal resident, non-resident, field and exportable training based on requirements established by the user and documented in Part II of the CFETP. They will also work with the AFCFM to develop acquisition strategies for obtaining resources needed to provide the identified training.

2.2. MFMs will ensure their training programs complement the CFETP mandatory initial and upgrade skills requirements. Identified requirements can be satisfied by OJT, resident training, contract training, or exportable courses. MAJCOM-developed training to support this AFSC must be identified for inclusion in this plan and must not duplicate available training resources

2.3. Each individual will complete the mandatory training requirements specified in this plan. The list of courses in Part II will be used as a reference to support training.

2.4. Qualification training packages (QTP) are developed by AETC, MAJCOM functional managers, and/or unit training managers. Unit developed QTPs will be provided to the parent MAJCOM and included in the CFETP.

2.5. Personnel in AFSC 1AXXX are exempt from maintaining OJT Training Folders (AF Form 623). All core tasks identified in this document are satisfied in IQT, MQT, and CT. That training is certified via AF Form 8 by trained instructors and evaluators. Certification of the Form 8 eliminates the requirement to document STS items in this CFETP.

2.6. The WSTP, where needed, will be developed by unit training personnel according to specific unit of assignment.

**3. Coordination and Approval.** The AFCFM is approval authority. MAJCOM representatives and AETC training personnel will identify and coordinate on the career field training requirements. The AETC training manager for this specialty will initiate an annual review of this document by AETC and MFMs to ensure currency and accuracy. Using the list of courses in Part II, they will eliminate duplicate training. Applicable inputs/changes to this CFETP will be routed to the 58 TRSS/DOB, 4249 Hercules Way SE, Kirtland AFB, NM 87117-5861.

## ***Section B - Career Progression and Information***

### **4. Specialty Description.**

**4.1. Specialty Summary.** Performs visual inspections and inflight duties. Operates and monitors engine and aircraft systems, controls, panels, indicators, and devices. Manages flight engineer functions and activities. Related DoD Occupational Subgroup: 050.

### **4.2. Duties and Responsibilities.**

4.2.1. Performs aircraft inspections. Performs aircrew visual inspection; non-scheduled aircraft maintenance; and pre-flight, through-flight, and post-flight inspections of aircraft away from home station. Maintains aircraft forms and records during flight and while aircraft is away from home station.

4.2.2. Computes and applies aircraft weight, balance, and performance data. Determines and verifies passenger, cargo, fuel, and emergency and special equipment distribution and weight. Computes aircraft weight and balance to ensure specified limits are maintained. Computes takeoff, climb, cruise, and landing data. Determines engine fuel consumption using airspeed, atmospheric data, charts, computer, or electronic calculator. Records actual aircraft performance data in flight engineer's log.

4.2.3. Operates and monitors engine and aircraft systems controls and indicators. Assists pilot or performs engine starts, and monitors runup, flight operations, and engine shutdown. Operates engine controls to provide desired efficiency and economy. Monitors engine instruments throughout period of operation. Controls, monitors, and regulates aircraft systems such as electric, communication, navigation, hydraulic, pneumatic, fuel, air conditioning, and pressurization; ventilation; auxiliary power unit; and lubrication systems. Observes warning indicators and light for fire, overheat, depressurization, and system failure. Reports abnormal conditions to pilot, and recommends corrective action. Performs duties as gunner, hoist operator, and cargo sling operator.

4.2.4. Plans and organizes flight engineer activities. Organizes flight engineering standardization, qualification, and other requirements flight engineer logs, reports, and records for accuracy, completeness, format, and compliance with current directives. Coordinates with other agencies and organizations to conduct flight engineer activities.

4.2.5. Directs flight engineer activities. Administers qualification flight to personnel engaged in flight engineer activities within flight test and operations organizations. Directs standardization of flight engineer performance in conjunction with aircraft performance engineering, engine conditioning, and preventive maintenance programs. Ensures conformance with prescribed aircrew procedures.

4.2.6. Inspects and evaluates flight engineer activities. Evaluates individual and group performance in terms of effectiveness and qualification in using equipment and materials. Interprets and discusses evaluation findings, and recommends action to correct deficiencies.

4.2.7. Performs technical flight engineer functions. Resolves technical problems encountered by operating units. Renders advice and technical assistance to agencies engaged in functions associated with flight engineer activities. Advises organizational commander or staff agencies on status of flight engineer activities and adequacy of equipment. Maintains qualification in aircraft.

**5. Skill/Career Progression.** Adequate training and timely progression from the apprentice to the superintendent skill level play an extremely important role in the Air Force's ability to accomplish its mission. Therefore, it is essential that everyone involved in training do their part to plan, develop, manage, conduct and evaluate an effective and efficient training program. The guidance provided in this part of the CFETP will ensure individuals receive viable training at appropriate points in their career. The following narrative and the AFSC 1A1X1B career field flow charts identify the training career path. They define the training required in an individual's career.

**5.1. Apprentice (3) Level.** Initial skills training in this specialty consists of the tasks and knowledge training provided in the 3-skill level resident course (BHFE) located at Kirtland AFB, NM. Initial skills training requirements were reviewed during the 1A1X1B Utilization and Training Workshop, held 4-8 May 1998 at Kirtland AFB, NM. The decision to train specific tasks and knowledge items in the initial skills course was based on 1A1X1B subject matter expert (SME) inputs. Task and knowledge training requirements are identified in the specialty training standard, at Part II, Sections A and B. Individuals must complete the initial skills course to be awarded AFSC 1A131B.

**5.2. Journeyman (5) Level.** Upgrade training to the 5-skill level in this specialty consists of task and knowledge training provided in Career Development Course (CDC) 1A151B and member holding the appropriate grade.

**5.3. Craftsman (7) Level.** Upgrade training to the 7-skill level in this specialty consists of completion of 18 months in 7-level training, and holding the appropriate grade.

**5.4. Superintendent (9) Level.** Entry into 9-skill level training is initiated when an individual possesses the 7-skill level, completes the Senior NCO Academy (in-residence course for active duty personnel, correspondence course for Reserve and Guard personnel), and sews on SMSgt.

**6. Training Decisions.** The CFETP uses a building block approach (simple to complex) to encompass the entire spectrum of training requirements for the Flight Engineer career field. This CFETP was developed to include life-cycle (day one through retirement) training requirements for this specialty. The spectrum includes a strategy for when, where, and how to meet the training requirements. The strategy must be apparent and affordable to reduce duplication of training and eliminate a disjointed approach to training. The following training decisions were made at the career field Utilization and Training Workshop held at Kirtland AFB, 4-8 May 1998.

6.1. Initial Skills Training.

6.2. Five-Level Upgrade Training. No formal changes.

6.3. Seven-Level Upgrade Training. No formal changes.

6.4. Proficiency Training. No formal changes.

**7. Community College of the Air Force.** Enrollment in CCAF occurs upon completion of basic military training. Off-duty education is a personal choice but is highly encouraged. CCAF provides the opportunity to obtain an Associates in Applied Sciences Degree. Contact the local education officer for more current course information. In addition to its associate degree program, CCAF offers the following:

**7.1. Occupational Instructor Certification.** Upon completion of instructor qualification training, consisting of the instructor methods course and supervised practice teaching, CCAF instructors who



possess an associates degree or higher may be nominated by their school commander/commandant for certification as an occupational instructor.

**7.2. Trade Skill Certification.** When a CCAF student separates or retires, a trade skill certification is awarded for the primary occupational specialty. The College uses a competency based assessment process for trade skill certification at one of four proficiency levels: Apprentice, Journeyman, Craftsman/Supervisor, or Master Craftsman/Manager. All are transcribed on the CCAF transcript.

**7.3. Degree Requirements:** All airmen are automatically entered into the CCAF program. The 5 skill level must be held at the time of program completion.

<b>Subject Area</b>	<b>Semester Hrs</b>
Technical Education	24
Leadership, Management, and Military Studies	6
Physical Education	4
General Education	15
Program Elective	15
Technical Education; Leadership, Management, and Military Studies or General Education	
<b>Total</b>	<b>64</b>

**7.3.1. Technical Education (24 Semester Hours):** A minimum of 12 semester hours of Technical Core subjects/courses must be applied and the remaining semester hours applied from Technical Core/Technical Elective subjects/courses. Requests to substitute subjects/courses must be approved in advance by the Technical Branch at CCAF.

**7.3.1.1. Technical Core:**

<b>Subjects/Courses</b>	<b>Semester Hrs</b>
Helicopter Flight Engineer	10
Air Cargo Operation	6
Air Refueling	18
Air Transportation Principles	6
Aviation/Flight Safety	6
CCAF Internship	16
Flight Rules and Regulations	3
Introduction to Aeronautics	3
Loadmaster Procedures	6
Survival Training	6

**7.3.1.2. Technical Electives:**

<b>Subjects/Courses</b>	<b>Semester Hrs</b>
Air Force Enlisted Professional Military Education	12
Aircraft Systems	6
Aviation Law	6
Climatology/Meteorology	6
Computer Science	6
FAA Airframe/Powerplant Certificate	6
Electricity/Electronics	6
Human Relations	3
Private Pilot's License	3

**7.3.2. Leadership, Management, and Military Studies (6 Semester Hours):** Professional military education and/or civilian management courses.

**7.3.3. Physical Education (4 Semester Hours):** This requirement is satisfied by completion of Basic Military Training. PHE 1000.

7.3.4. **General Education** (15 Semester Hours): Applicable courses must meet the criteria for application of courses to the General Education Requirement (GER) and be in agreement with the definitions of applicable general education subject/courses as provided in the CCAF general catalog.

<b>Subject/Courses</b>	<b>Semester Hrs</b>
Oral Communication Speech	3
Written Communication English Composition	3
Mathematics Intermediate algebra or college-level mathematics course is required If an acceptable mathematics course is applied as a Technical or Program Elective, a natural science course meeting GER application criteria may be applied as a General Education Requirement	3
Social Science Anthropology, Archaeology, Economics, Geography, Government, History, Political Science, Psychology, Sociology	3
Humanities Fine Arts (History, Criticism, and Appreciation), Foreign Language Literature, Philosophy, Religion	3

7.3.5. **Program Elective** (15 Semester Hours): Satisfied with applicable technical education; leadership, management, and military studies; or general education subjects/courses, including natural science courses meeting GER application criteria and foreign language credit earned at the Defense Language Institute or through the Defense Language Proficiency Test. Six semester hours of CCAF degree-applicable technical credit otherwise not applicable to this program may be applied.

7.4. Additional off-duty education is a personal choice that is encouraged for all. Individuals desiring to become an Air Education and Training Command Instructor should be actively pursuing an associates degree. A degreed faculty is necessary to maintain accreditation through the Southern Association of Colleges and Schools.

## 8. Career Field Flow Charts.

Figure 1. Enlisted Education and Training Path

Figure 2. Flight Engineer (Helicopter) Career Path

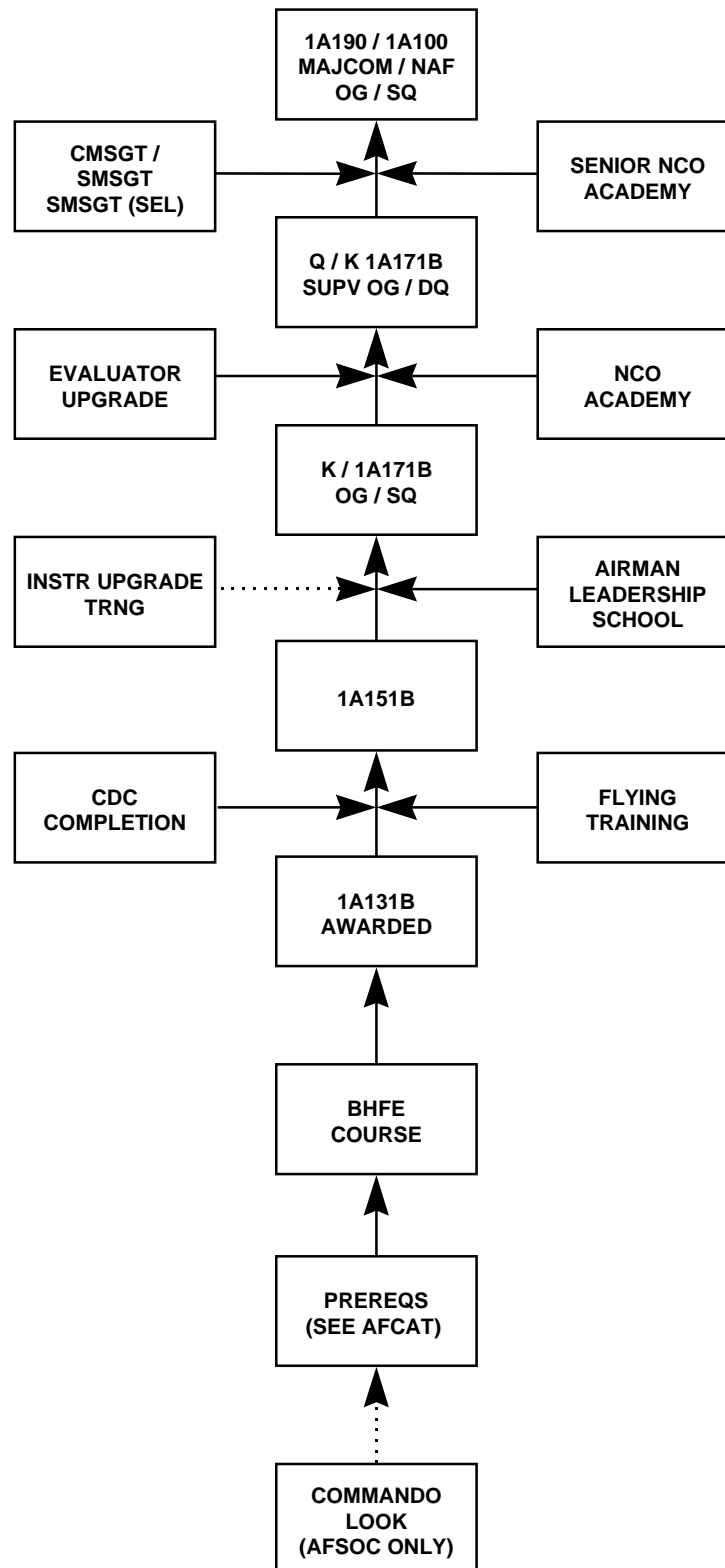
Figure 3. 1A1X1B Assignment Locations

### Enlisted Career Path

Education and Training Requirements	GRADE REQUIREMENTS				
	Rank	Earliest Sew-on	Air Force Average Sew-on	1A1XX(B) Average Sew-on	High Year of Tenure (HYT)
<b>Basic Military Training School</b>					
<b>Apprentice Technical School (3-Skill Level)</b>	Amn A1C	6 months 16 months			
<b>Upgrade To Journeyman (5-Skill Level)</b> - Complete 3 months duty position and apprentice experience before beginning journeyman training - Minimum 15 months on-the-job training. - Complete appropriate CDC	SrA	28 months	3 years	3 years	10 years
<b>Airman Leadership School (ALS)</b> - Must be a SrA with 48 months time in service or be a SSgt selectee - Resident graduation is a prerequisite for SSgt sew-on (Active Duty Only)					
<b>Upgrade To Craftsman (7-Skill Level)</b> - Minimum rank of SSgt select - 18 months OJT - Formal advanced skill training - Must be 7-skill level for TSgt sew-on	SSgt	3 years	7.4 years	7.4 years	20 years
<b>Noncommissioned Officer Academy (NCOA)</b> - Must be a TSgt or TSgt selectee - Resident graduation is a prerequisite for MSgt sew-on (Active Duty Only)	TSgt	5 years	14.1 years	14.3 years	20 years
	MSgt	8 years	16.5 years	15.9 years	24 years
<b>USAF Senior NCO Academy (SNCOA)</b> - Must be a SMSgt or SMSgt selectee - Resident graduation is a prerequisite for CMSgt sew-on (Active Duty Only)	SMSgt	11 years	20.4 years	19.8 years	26 years
<b>Upgrade To Superintendent (9-Skill Level)</b> - Minimum rank of SMSgt - Must be a resident graduate of SNCOA (Active Duty Only)	CMSgt	14 years	21.9 years	22.7 years	30 years
<b>Data current as of Jan 98</b>					

**Figure 1**

## Flight Engineer (Helicopter) Career Path



**Figure 2**

### 1A1X1B Assignment Locations

Command	Installation	Organization	Type	MWS
ACC	Langley AFB VA	MAJCOM	Staff	HH-60G
	Keflavik NAS IC	SQ	Line	HH-60G
	Moody AFB FL	SQ/OG	Line/Staff	HH-60G
	Nellis AFB NV	SQ/OG	Line/Staff	HH-60G
	Nellis AFB NV	TG	Test	HH-60G
AFRES*	Davis-Monthan AFB AZ	SQ	Line	HH-60G
	Patrick AFB FL	SQ	Line	HH-60G
	Portland IAP OR	SQ/OG	Line/Staff	HH-60G
NGB*	Gabreski AP NY	SQ/OG	Line/Staff	HH-60G
	Moffett Fld CA	SQ/OG	Line/Staff	HH-60G
AETC	Randolph AFB TX	NAF	Staff	UH-1N/HH-60G/MH-53J
	Fairchild AFB WA	FLT	Line	UH-1N
	Kirtland AFB NM	SQ/OG	Tng/Staff	UH-1N/HH-60G/MH-53J
AFSOC	Hurlburt Fld FL	SQ/MAJCOM	Line/Staff	MH-53J/MH-60G
	Kadena AB JA	OG	Staff	MH-53J
	Mildenhall UK	SQ	Line	MH-53J
	Osan AB KO	SQ	Line	MH-53J
AFSPC	Malmstrom AFB MT	FLT	Line	UH-1N
	Vandenberg AFB CA	FLT	Line	UH-1N
	FE Warren AFB WY	MAJCOM	Staff	UH-1N
AFMC	Eglin AFB FL	AFOTEC	Test	UH-1N
AMC	Andrews AFB MD	SQ/OG	Line/Staff	UH-1N
PACAF	Kadena AB JA	SQ/OG	Line/Staff	HH-60G
	Yokota AB JA	SQ	Line	UH-1N
NGB**	Kulis ANGB AK	SQ/OG	Line/Staff	HH-60G

\* Units are ACC Gained.

\*\*Unit is PACAF Gained

Note: The locations and aircraft depicted in this figure are subject to change without notice. This figure is for information only and is only as accurate as of the date the information was collected. Crew members wanting information on specific units, locations, and aircraft are encouraged to contact their MAJCOM functional managers.

**Figure 3**

## ***Section C - Skill Level Training Requirements***

**9. Purpose.** Skill level training requirements in this career field are defined in terms of tasks and knowledge requirements. This section outlines the specialty qualification requirements for each skill level in broad, general terms and establishes the mandatory requirements for entry, award, and retention of each skill level. The specific task and knowledge training requirements are identified in the STS at Part II, Sections A and B of this CFETP.

### **10. Specialty Qualifications:**

#### **10.1. Apprentice Level Training:**

##### **10.1.1. Specialty Qualification.**

**10.1.1.1. Knowledge.** Knowledge is mandatory of: electrical, communication, navigation, mechanical, hydraulic, and pneumatic systems applying to aircraft and related systems; flight theory; minor in-flight maintenance; personal equipment and oxygen use; aircraft emergency procedures; and using and interpreting diagrams, schematics, aircraft performance charts, loading charts, technical publications and flight manuals.

**10.1.1.2. Education.** For entry into this specialty, completion of high school with course in mechanics and mathematics is desirable.

**10.1.1.3. Training.** Completion of the EAUC-Helicopter Flight Engineer Helper (J3AQR1A111B 001) at Sheppard AFB Texas is mandatory for pipeline and non-aviation service cross training students. Completion of the Basic Helicopter Flight Engineer Apprentice course is mandatory for award of the AFSC 1A131B.

**10.1.1.4. Other.** The following are mandatory as indicated:

**10.1.1.4.1.** For entry into this specialty, prior qualification at the 5- or 7-skill level in the 1A0, 1A2, 1A5, 2A1, 2A3X1/X3, 2A4X1/2, 2A5, 2A6, or 2M0 career field ladder, or possession of a valid Federal Aviation Administration (FAA) Flight Engineer certificate with a jet or turboprop rating, or valid FAA aircraft and power plant license.

**10.1.1.4.2.** For entry, award, and retention of the AFSC:

**10.1.1.4.2.1.** Physical qualification for aircrew duty according to AFMAN 48-123, *Medical Examination and Standards*, Class III Medical Standards.

**10.1.1.4.2.2.** Qualification for aviation service according to AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*.

**10.1.1.4.3.** For award and retention of AFSC 1A131B, eligibility for a Secret security clearance according to AFI 31-501, *Personnel Security Management Program*.

**10.1.2. Training Sources and Resources.** Refer to Part II, Section D, Training Course Index.

#### **10.2. Journeyman Level Training:**

**10.2.1. Specialty Qualification.** Qualification in and possession of AFSC 1A131B.

**10.2.1.1. Knowledge.**

**10.2.1.2. Education.** No additional requirements for entry into this skill level.

**10.2.1.3. Training.** Completion of the following training is mandatory for the award of the 5-skill level:

**10.2.1.3.1.** Completion of the 5-skill level CDC.

10.2.1.3.2. Completion of the resident and informal training for the assigned weapon system.

10.2.1.3.3. Training must meet core task requirements established in the STS.

10.2.1.4. **Experience.** Qualification in and possession of AFSC 1A131. Also, experience is mandatory in functions such as aircraft and performance weight and balance computations, aircraft records maintenance, and aircraft systems maintenance and inspections.

10.2.1.5. **Other.** The following are mandatory as indicated:

10.2.1.5.1. For entry, award, and retention of the AFSC:

10.2.1.5.1.1. Physical qualification for aircrew duty according to AFMAN 48-123, *Medical Examination and Standards*, Class III Medical Standards.

10.2.1.5.1.2. Qualification for aviation service according to AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*.

10.2.1.5.2. For award and retention of AFSC 1A151B, eligibility for a Secret security clearance according to AFI 31-501, *Personnel Security Management Program*.

10.2.2. **Training Sources and Resources.** Refer to Part II, Section D, Training Course Index.

10.2.3. **Implementation.** Entry into upgrade training is initiated when an individual possesses the 3-skill level. Qualification training is initiated anytime an individual is assigned duties they are not qualified to perform. CDC 1A151B and QTPs will be completed to be awarded the 5-skill level.

### 10.3. Craftsman Level Training:

10.3.1. **Specialty Qualification.** Qualification in and possession of AFSC 1A151B.

10.3.1.1. **Knowledge.** In addition to the 5-skill level and other qualifications as listed above, an individual must possess the knowledge and skills necessary to supervise personnel.

10.3.1.2. **Education.** To assume the grade of SSgt and MSgt, individuals must be graduates of the Airman Leadership School (ALS) and NCO Academy, respectively.

10.3.1.3. **Training.** The CSAF has approved a variance eliminating the requirement for in-residence, 7-skill level, training for all 1AXXX (Air Operations career field personnel). However, minimum rank of SSgt (select) and 18 months OJT still apply.

10.3.1.4. **Experience.** Qualification in and possession of AFSC 1A151. Also, experience is mandatory in performing or supervising functions such as flight engineer activities.

10.3.1.5. **Other.** The following are mandatory as indicated:

10.3.1.5.1. For entry, award, and retention of the AFSC:

10.3.1.5.1.1. Physical qualification for aircrew duty according to AFMAN 48-123, *Medical Examination and Standards*, Class III Medical Standards.

10.3.1.5.1.2. Qualification for aviation service according to AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*.

10.3.1.5.2. For award and retention of AFSC 1A171B, eligibility for a Secret security clearance according to AFI 31-501, *Personnel Security Management Program*.

10.3.2. **Training Sources and Resources.** Refer to Part II, Section D, Training Course Index.

10.3.3. **Implementation.** Entry into upgrade training is initiated when an individual possesses the 5-skill level and is in the grade of SSgt. Qualification training is initiated anytime an individual is assigned duties they are not qualified to perform. All QTPs will be completed to be awarded the 7-skill level.

#### 10.4. **Superintendent Level Training:**

10.4.1. **Specialty Qualification.** Qualification in and possession of AFSC 1A171B.

10.4.1.1. **Knowledge.** In addition to the 7-skill level qualification, the 9-skill level individual must be an effective leader of personnel and manager of assigned resources. Completion of qualification criteria in currently assigned aircraft is mandatory.

10.4.1.2. **Education.** Resident graduate (active duty only) of Senior Noncommissioned Officer Academy (SNCOA) or sister service equivalent. Completion of CCAF degree is desired.

10.4.1.3. **Training.** Continuation Training courses are available and attendance should be used based on the individual's training needs.

10.4.1.4. **Experience.** Qualification in and possession of AFSC 1A171B. Also, experience managing flight engineer functions and activities.

10.4.1.5. **Other.** The following are mandatory as indicated:

10.4.1.5.1. For entry, award, and retention of the AFSC:

10.4.1.5.1.1. Physical qualification for aircrew duty according to AFMAN 48-123, *Medical Examination and Standards*, Class III Medical Standards.

10.4.1.5.1.2. Qualification for aviation service according to AFI 11-402, *Aviation and Parachutist Service, Aeronautical Ratings and Badges*.

10.4.1.5.2. For award and retention of AFSC 1A191, eligibility for a secret security clearance according to AFI 31-501, *Personnel Security Management Program*.

10.4.2. **Training Sources and Resources.** Refer to Part II, Section D, Training Course Index.

10.4.3. **Implementation.** Entry into upgrade training is initiated when an individual possesses the 7-skill level and is in the grade of SMSgt. Qualification training is initiated anytime an individual is assigned duties they are not qualified to perform. All QTPs will be completed to be awarded the 9-skill level.



## ***Section D - Resource Constraints***

**11. Purpose.** This section identifies known resource constraints which preclude optimal/desired training from being developed or conducted, including information such as cost and manpower. Narrative explanations of each resource constraint and an impact statement describing what effect each constraint has on training are included. Also included in this section are actions required, office of primary responsibility, are target completion dates. Resource constraints will be reviewed and updated at least annually.

### **12. Apprentice Level Training:**

**12.1. Constraint.** Several equipment deficiencies impact negatively on operational training at Kirtland AFB.

**12.1.1. Impact.** Operational squadrons have to qualify individuals in unit on this equipment taking away valuable time needed for continuation training that provides crew members the volume frequency and mix of training necessary to maintain proficiency in the assigned qualification level.

#### **12.1.2. Resources Required.**

12.1.2.1. M-240 Weapon System (H-60)

12.1.2.2. ALQ-157/162 Infrared/Electronic Counter Measures (H-53)

12.1.2.3. Electronic Control Units for GAU-2B mini-gun (H-53A)

12.1.2.4. Fast Rope quick release for right door (H-53A)

12.1.2.5. Dual 4500 round 7.62 Ammo Cans (H-60)

**12.1.3. Action Required.** Acquisition of this equipment would allow the 58 OG to conduct training at Kirtland AFB as opposed to conducting training in operational units.

**12.1.4. OPR/Target Completion Date.** 58 TRSS/DOA,(DSN 263-5234) 1960 Eileen Ave. SE, Kirtland AFB, NM, 87117-5822 / FY 00

Note: Due to the varied and changing nature of these resource constraints the point of contact listed above will direct inquiries to appropriate channels.

**13. Journeyman Level Training:** None identified.

**14. Craftsman Level Training:** None identified.

## Part II

### ***Section A - Specialty Training Standard***

**1. Implementation.** This STS will be used for technical training provided by AETC for classes beginning **981015** and graduating **981116**.

**2. Purpose.** As prescribed in AFI 36-2201, this STS:

2.1. Lists in column 1 (Task, Knowledge, and Technical Reference) the most common tasks, knowledge, and technical references (TR) necessary for airmen to perform duties at the 3-, 5-, and 7-skill level AFSC in the Flight Engineer Specialty ladder of the Aircrew Operation Career Field. These are based on an analysis of the duties in AFMAN 36-2108. Items in column 1 with an asterisk (\*) are the tasks/knowledge items that are trained in the resident wartime course. Column 2 (Core Tasks) identifies, by asterisk (\*), specialty-wide training requirements. NOTE: Core task is minimum qualification training required for upgrade to the 5-skill level, but only pertain to or are a function of the work center assigned.

2.2. Shows formal training and correspondence course requirements. Column 3 shows the proficiency to be demonstrated on the job by the graduate as a result of training (in course BHFE—PDS Code 1MX—described in AFCAT 36-2223) and the career knowledge provided by the correspondence course. There is no advanced correspondence course. See ECI/AFSC/CDC listing maintained by the unit OJT manager for current CDC listings.

2.3. Provides certification for OJT. Column 4 is used to record completion of task and knowledge training requirements. Certification is accomplished as outlined in AFI 36-2201.

**2.4. Qualitative Requirements.** Attachment 1 contains the proficiency code key used to indicate the level of training and knowledge provided by resident training and career development courses.

2.5. Becomes a job qualification standard (JQS) for on-the-job training and used according to AFI 36-2201. For OJT, the tasks in column 1 are trained and qualified to the go/no go level. Go means the individual can perform the task without assistance and meets local requirements for accuracy, timeliness, and correct use of procedures.

2.6. Is a guide for development of promotion tests used in the Weighted Airmen Promotion System (WAPS). Specialty Knowledge Tests (SKTs) are developed at the USAF Occupational Measurement Squadron by senior NCOs with extensive practical experience in their career fields. The tests sample knowledge of STS subject matter areas judged by test development team members to be most appropriate for promotion to higher grades. Questions are based on the flight engineer career development course (CDC). Individual responsibilities are in AFI 36-2606.

**3. Recommendations.** Report unsatisfactory performance of individual course graduates to 58 TRSS/DOA, 1960 Eileen Ave. SE, Kirtland AFB, New Mexico, 87117-5822. Reference specific STS paragraphs.

BY ORDER OF THE SECRETARY OF THE AIR FORCE  
OFFICIAL

Attachment:  
Qualitative Requirements

<i>THIS BLOCK FOR IDENTIFICATION PURPOSES ONLY</i>		
NAME OF TRAINEE		
PRINTED NAME ( <i>Last, First Middle Initial</i> )	INITIALS ( <i>Written</i> )	SSAN
PRINTED NAME OF CERTIFYING OFFICIAL AND WRITTEN INITIALS		
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	
N/I	N/I	

### QUALITATIVE REQUIREMENTS

PROFICIENCY CODE KEY		
	SCALE VALUE	DEFINITION: The Individual
TASK PERFORMANCE LEVELS	1	Can do simple parts of the task. Needs to be told or shown how to do most of the task. (EXTREMELY LIMITED)
	2	Can do most parts of the task. Needs help only on hardest parts. (PARTIALLY PROFICIENT)
	3	Can do all parts of the task. Needs only a spot check of completed work. (COMPETENT)
	4	Can do the complete task quickly and accurately. Can tell or show others how to do the task. (HIGHLY PROFICIENT)
*TASK KNOWLEDGE LEVELS	a	Can name parts, tools, and simple facts about the task. (NOMENCLATURE)
	b	Can determine step by step procedures for doing the task. (PROCEDURES)
	c	Can identify why and when the task must be done and why each step is needed. (OPERATING PRINCIPLES)
	d	Can predict, isolate, and resolve problems about the task. (ADVANCED THEORY)
**SUBJECT KNOWLEDGE LEVELS	A	Can identify basic facts and terms about the subject. (FACTS)
	B	Can identify relationship of basic facts and state general principles about the subject. (PRINCIPLES)
	C	Can analyze facts and principles and draw conclusions about the subject. (ANALYSIS)
	D	Can evaluate conditions and make proper decisions about the subject. (EVALUATION)
<p align="center"><b>EXPLANATIONS</b></p> <p>* A task knowledge scale value may be used alone or with a task performance scale value to define a level of knowledge for a specific task. (Examples: b and 1b)</p> <p>** A subject knowledge scale value is used alone to define a level of knowledge for a subject not directly related to any specific task, or for a subject common to several tasks.</p> <p>- This mark is used alone instead of a scale value to show that no proficiency training is provided in the course or CDC.</p> <p>x This mark is used alone in course columns to show that training is required but not given due to limitations in resources.</p>		

Users are responsible for annotating training references (TR) to identify current references pending STS revision

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
1. CAREER LADDER PROGRESSION TR: AFMAN 36-2108										
1.1. Progression in Career Ladder 1A1X1B		A			B					
1.2. Duties of AFSC 1A131B/51B/71B		A			B					
2. SECURITY TR: AFI 10-1101										
2.1. Communications Security (COMSEC) Relating to AFSC 1A1X1B		A			-					
2.2. Operations Security (OPSEC) Relating to AFSC 1A1X1B		A			-					
3. AIR FORCE OCCUPATIONAL SAFETY AND HEALTH (AFOSH) PROGRAM TR: AFI 91-301										
3.1. Practice Personal and Equipment Safety When Servicing Aircraft Systems		-			B					
3.2. Observe Safety Precautions in Areas of:										
3.2.1. Engine air intake and exhaust		A			B					
3.2.2. High intensity sound		A			B					
3.2.3. Rotor planes of rotation		A			B					
3.2.4. Antenna radiation		A			B					
3.2.5. Aircraft electrical system		A			B					
3.2.6. Aircraft ground handling		-			B					
3.2.7. Aircraft containing explosive materials TR: AFJMAN 24-204; AFMAN 91-201		-			B					
3.2.8. High intensity light (strobes)		A			B					
3.2.9. Foreign object damage (FOD)		A			B					
3.2.10. Ground support equipment		-			-					
3.2.11. Use Portable fire extinguishers		a			-					
4. AIR FORCE PUBLICATIONS TR: AFIs 11-215, 37-160, Vol 1; T.O.s 00-5-1, 00-5-2										
4.1. Use Aircraft Maintenance T.O.s		a			B					
4.2. Use Issued Flight Publications	*	a			B					
4.3. Maintain Flight Publications		1a			B					
4.4. Flight Publication Improvement Reports		-			B					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
4.5. Use Flight Crew Information File		A			-					
5. SUPERVISION TR: AFMAN 36-2108; AFI 36-2201										
5.1. Orient New Personnel		-			-					
5.2. Assign Personnel to Work Crews		-			-					
5.3. Plan Work Assignments and Priorities		-			-					
5.4. Schedule Work Assignments		-			-					
5.5. Establish										
5.5.1. Work methods		-			-					
5.5.2. Controls		-			-					
5.5.3. Performance standards										
5.6. Evaluate Work Performance of Subordinate Personnel TR: AFI 36-2403		-			-					
5.7. Resolve Technical Problems for Subordinate Personnel TR: AFI 21-114		-			-					
5.8. Counsel Personnel TR: AFPAM 36-2618		-			-					
5.9. Initiate Action to Correct Substandard Performance by Personnel TR: AFIs 36-2503, 36-2907		-			-					
6. TRAINING TR: AFMAN 36-2108, AFI 36-2201, AFCAT 36- 2223										
6.1. Evaluate Personnel to Determine Need for Training		-			-					
6.2. Plan and Supervise Training										
6.3. Maintain Training Records		-			-					
6.4. Evaluate Effectiveness of Training Programs		-			-					
6.5. Recommend Personnel for Training		-			-					
7. PARTICIPATE IN THE USAF GRADUATE EVALUATION PROGRAM TR: AFI 36-2201		-			-					
8. FLIGHT MANAGEMENT TR: AFD 11-4; AFI 11-401										
8.1. Responsibilities of HQ USAF and MAJCOMs		-			A					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
8.2. Flight Authorization		-			A					
8.3. Functions of Unit Flight Management		-			A					
8.4. Flight Documentation		-			A					
8.5. Aircrew Training Program TR: AFIs 11-402, 11-202, Vol 1	*									
8.5.1. Initial qualification training		A			B					
8.5.2. Mission qualification training		A			B					
8.5.3. Continuation training		A			B					
8.5.4. Upgrade training		A			B					
8.6. Aircrew Standardization/Evaluation Program TR: AFI 11-202, Vol 2										
8.6.1. Evaluation Form (AF Form 8)		A			B					
8.6.2. Flight Evaluation Folder (FEF)		A			B					
8.7. General Flight Rules TR: AFI 11-206		A			B					
8.8. Functional Check Flight (FCF) Procedures TR: T.O. 1-1-300; Applicable 6CF-1 T.O.		-			-					
8.9. Aviation Service, Aeronautical Ratings, Flight Pay, and Badges TR: AFI 11-402		A			-					
9. VIBRATION AND TRACKING EQUIPMENT TR: Applicable -2-1 T.O		-			-					
10. AIRCRAFT AND EQUIPMENT RECORDS TR: T.O. 00-20 series										
10.1. Use AFTO Form 781 Series	*	A			B					
10.2. Use AFTO Form 781 (AFORMS) TR: AFI 11-401		A			B					
11. HELICOPTER GENERAL										
11.1. Helicopter Features TR: Applicable -2-1 T.O										
11.1.1. Basic construction		A			B					
11.1.2. Compartment location		A			B					
11.1.3. Theory of Helicopter Aerodynamics		A			B					
11.2. Helicopter Configurations TR: Applicable -1 and -9 T.O.	*	-			A					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
11.3. Helicopter Ground Handling TR: AFI 11-218; AFOSH STD 127-66; applicable -2-1 T.O.										
11.3.1. Tiedown		-			A					
11.3.2. Secure		-			A					
11.3.3. Marshall		-			A					
11.3.4. Tow		-			A					
11.4. Take Oil Samples for Analysis TR: T.O. 33-1-37		-			A					
11.5. General Maintenance Troubleshooting TR: Applicable -2 T.O.		-			A					
12. LANDING GEAR SYSTEMS TR: Applicable -1, -2, and -2-1 T.O.										
12.1. Principles of operation		A			B					
12.2. Identify system components		A			A					
12.3. Limitations		-			-					
12.4. Operate		-			A					
12.5. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					
13. AUXILIARY SYSTEMS TR: Applicable -1 and -2-1 T.O.	*									
13.1. Rescue Hoist System										
13.1.1. Principles of operation		A			B					
13.1.2. Identify system components		A			A					
13.1.3. Limitations		-			-					
13.1.4. Operate		-			A					
13.1.5. Rescue devices TR: T.O.s 00-75-5, 14-S-6-3-1		-			B					
13.1.6. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.2. Cargo Sling System										
13.2.1. Principles of operation		A			B					
13.2.2. Identify system components		A			A					
13.2.3. Limitations		-			-					
13.2.4. Operate		-			A					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
13.2.5. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.3. Anti-Icing System										
13.3.1. Principles of operation		A			B					
13.3.2. Identify system components		A			A					
13.3.3. Limitations		-			-					
13.3.4. Operate		-			A					
13.3.5. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.4. Deicing System										
13.4.1. Principles of operation		A			B					
13.4.2. Identify system components		A			A					
13.4.3. Limitations		-			-					
13.4.4. Operate		-			A					
13.4.5. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			-					
13.5. Windshield Wiper System										
13.5.1. Principles of operation		A			B					
13.5.2. Identify system components		A			A					
13.5.3. Operate		-			A					
13.5.4. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.6. Fire Detection System										
13.6.1. Principles of operation		A			B					
13.6.2. Identify system components		A			A					
13.6.3. Operate		-			A					
13.6.4. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.7. Fire Extinguisher System										
13.7.1. Principles of operation		A			B					
13.7.2. Identify system components		A			A					
13.7.3. Limitations		-			-					
13.7.4. Operate		-			A					



1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
13.7.5. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.8. Heating and Ventilation Systems										
13.8.1. Principles of operation		A			B					
13.8.2. Identify system components		A			A					
13.8.3. Limitations		-			-					
13.8.4. Operate		-			A					
13.8.5. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
13.9. APP/APU										
13.9.1. Principles of operation		A			B					
13.9.2. Identify system components		A			A					
13.9.3. Limitations		-			-					
13.9.4. Operate		-			A					
13.9.5. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-			B					
14. FLIGHT CONTROL SYSTEMS TR: Applicable -1, -2-2, and -2-4 T.O.										
14.1. Principles of Operation	*									
14.1.1. Main rotor		A			B					
14.1.2. Tail rotor		A			B					
14.2. Identify system components		A			A					
14.3. Limitations		-			-					
14.4. Monitor		-			-					
14.5. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					
15. AUTO FLIGHT CONTROLS SYSTEM (AFCS) TR: Applicable -1 and-2-3 T.O.										
15.1. Principles of Operation		A			B					
15.2. Identify System Components		A			A					
15.3. Limitations		-			-					
15.4. Operate		-			A					
15.5. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
16. HYDRAULIC SYSTEMS TR: Applicable -1, -2-1, and -2-4 T.O.										
16.1. Principles of Operation	*	A				B				
16.2. Identify System Components		A				A				
16.3. Limitations		-				-				
16.4. Operate		-				A				
16.5. Service		-				B				
16.6. Detect malfunctions/take corrective action TR: Applicable -1 T.O.		-				B				
17. TRANSMISSION AND DRIVE SYSTEMS TR: Applicable -1, -2-1, and -2-4 T.O.										
17.1. Principles of Operation	*	A				B				
17.2. Identify System Components		A				A				
17.3. Limitations		-				-				
17.4. Monitor		-				-				
17.5. Service		-				A				
17.6. Chip Detectors										
17.6.1. Remove and install		-				A				
17.6.2. Inspect		-				A				
17.7. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-				A				
18. POWER PLANTS TR: Applicable -1, -2-1, -2-2 and -10 T.O.										
18.1. Principles of Operation	*	A				B				
18.2. Identify System Components		A				A				
18.3. Limitations		-				-				
18.4. Operate		-				-				
18.5. Service		-				A				
18.6. Engine Checks		-				A				
18.7. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-				B				
19. ROTOR SYSTEMS TR: index for applicable -1, -2-1, and -2-4 T.O.										
19.1. Identify System Components		A				B				

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
19.2. Principles of Operation	*	A			B					
19.3. Limitations		-			-					
19.4. Inspect Blades TR: Applicable -3 T.O.		-			-					
19.5. Service		-			B					
19.6. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					
20. INSTRUMENT SYSTEMS TR: Applicable -1 T.O.										
20.1. Fundamental Principles		A			B					
20.2. Identify System Components		A			A					
20.3. Limitations		-			-					
20.4. Monitor		-			-					
20.5. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					
21. FUEL SYSTEMS TR: Applicable -1, -2-1, and -2-2 T.O.	*									
21.1. Principles of Operation		A			B					
21.2. Identify System Components		A			B					
21.3. Limitations		-			-					
21.4. Service TR: T.O. 00-25-172										
21.4.1. Normal refuel		-			A					
21.4.2. Hot refuel		-			A					
21.4.3. Air refuel TR: See T.O.s 1-1C-1, 1-1C-1-20		-			A					
21.5. Fuel Management										
21.5.1. Consumption		A			B					
21.5.2. Transfer		-			B					
21.5.3. Crossfeed		-			B					
21.5.4. Jettison		-			B					
21.5.5. Dump		-			B					
21.6. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
22. ELECTRICAL SYSTEMS TR: Applicable -1, -2-1, and -2-5 T.O.										
22.1. Principles of Operation		A			B					
22.2. Identify System Components		A			A					
22.3. Limitations		-			-					
22.4. Operate	*	-			A					
22.5. Detect Malfunctions/Take Corrective Action TR: Applicable -1 T.O.		-			B					
23. CARGO DOOR(S) AND RAMP SYSTEMS TR: Applicable -1 and -2-1 T.O.										
23.1. Principles of Operation		A			B					
23.2. Identify System Components		A			B					
23.3. Limitations		-			-					
23.4. Operate		-			-					
24. COMM AND NAVIGATION SYSTEMS TR: Applicable -1 T.O.	*									
24.1. Communication Systems										
24.1.1. Principles of operation		A			B					
24.1.2. Identify system components		A			B					
24.1.3. Operate		-			A					
24.2. Navigation Systems										
24.2.1. Radios										
24.2.1.1. Principles of operation	*	A			B					
24.2.1.2. Identify system components	*	A			B					
24.2.1.3. Operate		-			A					
25. AIRCRAFT COUNTERMEASURES TR: Applicable -1 T.O.	*									
25.1. Electronic Countermeasures (ECM)										
25.1.1. Principles of operation		A			B					
25.1.2. Identify system components		A			B					
25.1.3. Operate		-			A					
25.1.4. Monitor		-			B					
25.2. Infrared Countermeasures (IRCM)										

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
25.2.1. Principles of operation		A			B					
25.2.2. Identify system components		A			B					
25.2.3. Operate		-			A					
25.2.4. Monitor		-			B					
26. AIRCRAFT WEAPON SYSTEMS TR: T.O.s 11A10, 11W series, 33 series, 34 series; applicable -1 T.O.	*									
26.1.										
26.1.1. Principles of operation		A			B					
26.1.2. Identify system components		A			B					
26.1.3. Inspect		-			B					
26.1.4. Load and unload ammunition containers		-			A					
26.1.5. Operate		-			A					
26.	*									
26.1.6. Types of ammunition		-			B					
26.1.7. Detect malfunctions/take corrective action		-			B					
27. GROUND AND INFLIGHT EMERGENCY PROCEDURES TR: Applicable -1 T.O.										
27.1. Detect Emergency Conditions/System Malfunctions	*	-			A					
27.2. Accomplish Appropriate Checklist/Corrective Action TR: AFI 11-402	*									
27.3. Demonstrate Crew Coordination		-			-					
28. MISSION PLANNING AND COMPUTATIONS TR: AFMAN 11-227; Applicable -1 T.O.										
28.1. Perform Pre-Mission Planning	*	1b			B					
28.2. Compute Helicopter Weight and Balance TR: T.O.s 1-1B-40, 1-1B-50; applicable-5 and -9 T.O.										
28.2.1. Automated Weight and Balance System (AWBS)		2b			B					
28.2.2. Mathematical		2b			B					
28.3. Compute Performance Data										
28.3.1. Take-Off and Landing Data		2b			B					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
28.3.2. Inflight		-			B					
28.4. Use CPU-26 Computer/Calculator to Compute TR: AFM 51-40										
28.4.1. Distance		2b			-					
28.4.2. Time		2b			-					
28.4.3. Fuel		2b			-					
28.5. Use Flight Information Publication TR: AFI 11-217, Vol 1&2		1a			A					
28.6. Perform Post Mission Duties		-			-					
28.7. Use AF Forms 15/315/AVCARD TR: AFIs 23-201, 23-202		1a			A					
28.8. Map Interpretation TR: AFM 51-40										
28.8.1. Determine latitude/longitude		2b			B					
28.8.2. Determine Military Grid Reference System (GRS)		2b			B					
28.8.3. Symbology		2b			B					
28.8.4. Plotter		2b			B					
29. CARGO AND PASSENGERS TR: Applicable -1 and -9 T.O.										
29.1. Perform Cargo Inspection		-			B					
29.2. Perform Passenger Inspection		-			-					
29.3. Brief Passengers		-			-					
29.4. Load and Unload										
29.4.1 Cargo		1a			A					
29.4.2 Passengers		-			A					
29.4.3 Litters		-			-					
29.5. Use Cargo Restraining Devices		1a			B					
29.6. Cargo Tie-Down Limitations		A			B					
30. PERFORM HELICOPTER INSPECTIONS TR: T.O. 00-20 series; applicable-1 and 6WC-1 T.O										
30.1. Preflight		-			A					
30.2. Thru-flight		-			A					
30.3. Postflight		-			A					

1. TASKS, KNOWLEDGE AND TECHNICAL REFERENCES	2. Core Task	3. Proficiency codes used to indicate training / information provided					4. CERTIFICATION OF OJT			
		A 3-Skill Level		B 5-Skill Level		C 7-Skill Level	A	B	C	D
		(1) CRS	(2) CDC	(1) CRS	(2) CDC	(1) OJT	Start Date	Comp Date	Certify Official's Initials	Trainee's Initials
30.4. Aircrew	*	-			A					
31. PYROTECHNICS TR: AFMAN 91-201; T.O. 11A series										
31.1. Safety Precautions		A			B					
31.2. Classification		-			B					
31.3. Types		-			A					
31.4. Inspect		-			-					
31.5. Load		-			-					
31.6. Arm/De-Arm		-			-					
31.7. Deploy		-			-					
32. NIGHT VISION GOGGLES TR: T.O. 12S10-2AVSAFS6-4										
32.1. Care		A			B					
32.2. Use		A			B					
33. ALTERNATE INSERTION/EXTRACTION AND LOADING TR: See applicable MAJCOM instructions	*									
33.1. Equipment		A			B					
33.2. Inspection		-								
33.3. Use		-								
34. Perform Aircrew Scanning Duties		A								
35. Crew Resource Management (CRM)		A								
<b>SUMMARY OF CHANGES</b>										
This STS was revised and updated from the Helicopter Flight Engineer 1A1X1B Utilization and Training Workshop held May 98. This revision added requirements to teach Crew Resource Management, weapons, night vision goggles (NVG), and Comm/Nav systems. No deletions were made, although less emphasis is now placed on certain subject items now taught at EAUC.										

## ***Section B - Course Objective List***

**4. Measurement.** Each objective is indicated as follows: **W** indicates task or subject knowledge which is measured using a written test, **PC** indicates required task performance which is measured with a performance progress check, and **PC/W** indicates separate measurement of both knowledge and performance elements using a written test and a performance progress check.

**5. Standard.** The standard is 85% on written examinations. Standards for performance measurement are indicated in the objective and delineated on the individual progress checklist. Instructor assistance is provided as needed during the progress check, and students may be required to repeat all or part of the behavior until satisfactory performance is attained.

**6. Proficiency Level.** The tasks performance factors in Block I and Block III are taught to the "A" level which means the students can identify basic facts and terms about the subject. The tasks performance factors in Block II are taught to the "2b" proficiency level which means the students can do most parts of the task, but does need assistance on the hardest parts of the task (partially proficient). The student can also determine step-by-step procedures for doing the task.

**7. Course Objective.** These objectives are listed in the sequence taught by block of instruction. Underlined STS elements show where the training is closed-out for the level indicated.

### **7.1. Initial Skills Course: Terminal Objectives**

#### **7.1.1. Block I.**

7.1.1.1. Define progression in career ladder 1A1X1B and the duties of AFS 1A131B/51B/71B/99.

STS: 1.1., 1.2. Measure: W

7.1.1.2. Define the COMSEC/OPSEC Program and the procedures to report security. STS: 2.1., 2.2. Measure: W

7.1.1.3. Recognize specific hazards associated with a helicopter flight line. STS: 3.2.1, 3.2.2, 3.2.3, 3.2.4., 3.2.5., 3.2.8., 3.2.9., 3.2.11. Measure: W

7.1.1.4. Arrange and maintain issued flight publications, Flight Crew Information File and maintenance TO's. STS: 4.1., 4.2., 4.3., 4.5., 28.5. Measure: W

7.1.1.5. List the various types of aircrew training, evaluation, flight rules, and ratings. STS: 8.5.1., 8.5.2., 8.5.3., 8.5.4., 8.6.1., 8.6.2., 8.7., 8.9. Measure: W

7.1.1.6. Reproduce applicable entries in the various AFTO form 781 series and recall the use of Forms 315/15/AVCARD. STS: 10.1., 10.2., 28.7. Measure: W

#### **7.1.2. Block II.**

7.1.2.1. Compute helicopter weight and balance. STS: 28.1., 28.2.1., 28.2.2. Measure: W

7.1.2.2. Compute helicopter performance data. STS 28.3.1. Measure: W

7.1.2.3. Compute fuel, distance, and time using the CPU-26 and a calculator. STS: 28.4.1., 28.4.2., 28.4.3. Measure: W

7.1.2.4. Locate, using a plotter, latitude/longitude, Military Grid Reference System points, and symbology on various maps. STS: 28.8.1., 28.8.2., 28.8.3., 28.8.4. Measure: W

7.1.2.5. Duplicate the proper use of cargo tiedown procedures and recall limitations. STS 29.4.1., 29.5., 29.6. Measure: PC, W



### 7.1.3. **Block III.**

7.1.3.1. Recall basic construction and compartment location of the various MDS. STS: 11.1.1., 11.1.2. Measure: W

7.1.3.2. Recall the operating principles and components of landing gear systems. STS: 12.1., 12.2. Measure: W

7.1.3.3. Recall the operating principles and components of rescue hoist systems. STS: 13.1.1., 13.1.2. Measure: W

7.1.3.4. Recall the operating principles and components of cargo sling systems. STS: 13.2.1., 13.2.2. Measure: W

7.1.3.5. Recall the operating principles and components of anti-ice systems. STS: 13.3.1., 13.3.2. Measure: W

7.1.3.6. Recall the operating principles and components of deicing systems. STS: 13.4.1., 13.4.2. Measure: W

7.1.3.7. Recall the operating principles and components of windshield wiper systems. STS: 13.5.1., 13.5.2. Measure: W

7.1.3.8. Recall the operating principles and components of fire detection systems. STS: 13.6.1., 13.6.2. Measure: W

7.1.3.9. Recall the operating principles and components of fire extinguishing systems. STS: 13.7.1., 13.7.2. Measure: W

7.1.3.10. Recall the operating principles and components of heating and ventilation systems. STS: 13.8.1., 13.8.2. Measure: W

7.1.3.11. Recall the operating principles and components of APP/APU systems. STS: 13.9.1., 13.9.2. Measure: W

7.1.3.12. Recall the operating principles and components of main/tail rotor flight control systems. STS: 14.1.1., 14.1.2., 14.2. Measure: W

7.1.3.13. Recall the operating principles and components of auto flight control systems (AFCS). STS: 15.1., 15.2. Measure: W

7.1.3.14. Recall the operating principles and components of hydraulic systems. STS: 16.1., 16.2. Measure: W

7.1.3.15. Recall the operating principles and components of transmission and drive systems. STS: 17.1., 17.2. Measure: W

7.1.3.16. Recall the operating principles and components of power plants. STS: 18.1., 18.2. Measure: W

7.1.3.17. Recall the operating theories of helicopter aerodynamics. STS: 11.1.3. Measure: W

7.1.3.18. Recall the operating principles and components of rotor systems. STS: 19.1., 19.2. Measure: W

7.1.3.19. Recall the fundamental principles and components of instrument systems. STS: 20.1., 20.2. Measure: W

7.1.3.20. Recall the operating principles and components of fuel systems. STS: 21.1., 21.2., 21.5.1. Measure: W

- 7.1.3.21. Recall the operating principles and components of electrical systems. STS: 22.1, 22.2. Measure: W
- 7.1.3.22. Recall the operating principles and components of cargo doors and ramp systems. STS: 23.1, 23.2. Measure: W
- 7.1.3.23. Recall the operating principles and components of communication and navigation systems. STS: 24.1.1, 24.1.2, 24.2.1.1, 24.2.1.2. Measure: W
- 7.1.3.24. Recall the operating principles and components of infrared and electronic countermeasure systems. STS: 25.1.1, 25.1.2, 25.2.1, 25.2.2. Measure: W
- 7.1.3.25. Recall the operating principles and components of weapon systems. STS: 26.1.1, 26.1.2. Measure: W
- 7.1.3.26. Recall the use and hazards of pyrotechnics. STS: 31.1. Measure: W
- 7.1.3.27. Recall the care and use of Night Vision Goggles. STS: 32.1, 32.2. Measure: W
- 7.1.3.28. Recall the equipment and procedures used for alternate insertion/extraction/loading. STS: 33.1. Measure: W
- 7.1.3.29. Recall voice marshaling concepts and aircrew scanning duties. STS: 34. Measure: W
- 7.1.3.30. Recall the concept of Crew Resource Management. STS: 35. Measure: W

## 7.2. Advanced Skills Course:

**NOTE:** There is currently no advanced course. This area is reserved.

## Section C - Support Material

**NOTE:** There are currently no support material requirements. This area is reserved.

## Section D - Training Course Index

**9. Purpose.** This section of the CFETP identifies training courses available for the specialty and shows how the courses are used by each MAJCOM in their career field training programs.

### 10. Air Force In-Residence Courses.

COURSE NUMBER	COURSE TITLE	LOCATION
J3AQR1A111B 001	Helicopter Flight Engineer Helper-EAUC	Sheppard AFB, TX
BHFE	Basic Helicopter Flight Engineer	Kirtland AFB, NM
S-V80-A	Combat Survival Training	Fairchild AFB, WA
S-V84-A	USN Underwater Egress Training	Various Locations
S-V86-A	Water Survival Training Course	Pensacola NAS, FL
S-V90-A	Water Survival Training (non-parachuting)	Fairchild AFB, WA
H1NFEMQ	UH-1N Flight Engineer Mission Qualification	Kirtland AFB, NM
UH1NFENVGQ	UH-1N Flight Engineer NVG Qualification	Kirtland AFB, NM
MH53JFEMQ	MH-53J Flight Engineer Mission Qualification	Kirtland AFB, NM

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>LOCATION</b>
MH53JFERQ	MH-53J Flight Engineer Requalification	Kirtland AFB, NM
MH53JFESR	MH-53J Flight Engineer Simulator Refresher	Kirtland AFB, NM
HH60GFEMQ	HH-60G Flight Engineer Mission Qualification	Kirtland AFB, NM
HH60GFESR	HH-60G Flight Engineer Simulator Refresher	Kirtland AFB, NM

#### **11. Advanced Training.**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>LOCATION</b>
AFSOC 155000	Introduction to Special Operations Course	Hurlburt Fld
FIP	Flight Instructor Preparatory Course	Kirtland AFB
HH60GFEIQ	HH-60G Flight Engineer Instructor Qualification	Kirtland AFB, NM
MH53JFEIQ	MH-53J Flight Engineer Instructor Qualification	Kirtland AFB, NM
H1NFEIQ	UH-1N Flight Engineer Instructor Qualification	Kirtland AFB, NM

#### **12. Other Courses in the Field.**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>	<b>USER</b>
	Flight Engineer Flight Examiner	MAJCOM
	Flight Engineer Refresher Course	MAJCOM

#### **13. Extension Course Institute (ECI) Courses.**

<b>COURSE NUMBER</b>	<b>COURSE TITLE</b>
CDC 1A151	Flight Engineer Journeyman (Helicopter Qualified)

#### ***Section E - MAJCOM Unique Requirements***

Helicopter flight engineers are required to complete initial and recurring training events for their primary assigned aircraft. Refer to Air Force Instructions, MAJCOM, and Multi-Command Instructions series for additional information on these requirements. Additionally, to maintain qualification and proficiency, helicopter flight engineers will accomplish the flying currency requirements identified in AFI 11-2xxxx, Vol 1 (formerly MCI 10-202), as supplemented by MAJCOMs.